



MSDS: 0036028
 Print Date: 03/10/2007
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MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: FM® 2550 Structural Adhesive
Synonyms: None
Chemical Family: BMI/Epoxy
Molecular Formula: Mixture
Molecular Weight: Mixture

CYTEC INDUSTRIES INC., FIVE GARRET MOUNTAIN PLAZA, WEST PATERSON, NEW JERSEY 07424, USA
 For Product Information call 1-800/652-6013. Outside the USA and Canada call 1-973/357-3193.
 EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call CHEMTREC: 1-800/424-9300. Outside the USA and Canada call 1-703/527-3887.

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2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

Component / CAS No.	%	(w/w)	OSHA (PEL):	ACGIH (TLV)	Carcinogen
Modified phenolic epoxy resin	1 - 5		Not established	Not established	-
Poly(aromatic glycidyl ether) #3	1 - 5		Not established	Not established	-
Glass oxide 65997-17-3	5-10		Not established	1 f/cc respirable fibers (TWA) 5 mg/m³ inhalable fraction (TWA)	NTP
Diglycidyl resorcinol ether 101-90-6	4 - 5		Not established	Not established	IARC 2B NTP
Substituted Bisphenol A	10 - 30		Not established	Not established	-
Bismaleimide resin #2	7 - 13		Not established	Not established	-
Bismaleimide resin #1	10 - 30		Not established	Not established	-

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Component / CAS No.	% (w/w)	OSHA (PEL):	ACGIH (TLV)	Carcinogen
Silicon dioxide, amorphous (included under CAS # 7631-86-9) 112945-52-5	2 - 3	20 mppcf	Not established	-

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR:

Color:	yellow
Appearance:	viscous liquid
Odor:	odorless

STATEMENTS OF HAZARD:

WARNING! MAY CAUSE SEVERE ALLERGIC SKIN REACTION

CHRONIC HAZARD WARNING:

CONTAINS MATERIAL WHICH CAUSED CANCER IN LABORATORY ANIMAL TESTS

Risk of cancer depends on duration and level of exposure

POTENTIAL HEALTH EFFECTS

EFFECTS OF EXPOSURE:

Based on the physical form of this product, exposure by the oral or inhalation route is unlikely. The acute dermal (rabbit) LD50 value is estimated to be greater than 2000 mg/kg. Repeated or prolonged dermal contact may cause allergic skin reactions. Direct contact with this material may cause moderate skin irritation. Refer to Section 11 for toxicology information on the regulated components of this product.

4. FIRST AID MEASURES

Ingestion:

Not an expected route of exposure.

Skin Contact:

Wash immediately with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.

Eye Contact:

Not an expected route of exposure.

Inhalation:

If breathing has stopped, trained personnel should administer artificial respiration. If the heart has stopped, trained personnel should administer cardio-pulmonary resuscitation.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Use water spray or fog, carbon dioxide or dry chemical.

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Protective Equipment:

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. Refer to Section 8 (Exposure Controls/Personal Protection) for appropriate personal protective equipment.

Methods For Cleaning Up:

Sweep up into containers for disposal. Flush spill area with water.

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures: Avoid contact with skin and clothing. Wash thoroughly after handling.

Special Handling Statements: Heating or curing of unused rolls or sheets of product prior to disposal is not recommended. Heating a large mass of product can lead to a rapid decomposition reaction, generating heat, smoke and possibly fire.

STORAGE

This material does not have specific storage conditions. Refer to storage temperature below.

Storage Temperature: Store at <-12 °C 10 °F

Reason: Integrity.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure when spraying or curing at elevated temperatures.

Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure. A full facepiece respirator also provides eye and face protection. Cutting, grinding or sanding of parts fabricated after curing may create respirable dust particles. Respiratory protection appropriate for this dust may be required. Refer to components listed above for potential hazardous components in the dust.

Eye Protection:

Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:

Avoid skin contact. Wear impermeable gloves and suitable protective clothing. Barrier creams may be used in conjunction with the gloves to provide additional skin protection.

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Additional Advice:

Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. It is recommended that a shower be taken after completion of workshift especially if significant contact has occurred. Work clothing should then be laundered prior to reuse. Street clothing should be stored separately from work clothing and protective equipment. Work clothing and shoes should not be taken home.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	yellow
Appearance:	viscous liquid
Odor:	odorless
Boiling Point:	Not applicable
Melting Point:	Not available
Vapor Pressure:	Not applicable
Specific Gravity/Density:	~1.3
Vapor Density:	Not applicable
Percent Volatile (% by wt.):	<1
pH:	Not available
Saturation In Air (% By Vol.):	Not applicable
Evaporation Rate:	Negligible
Solubility In Water:	negligible
Volatile Organic Content:	Not available
Flash Point:	>100 °C 212 °F Closed Cup
Flammable Limits (% By Vol):	Not applicable
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not applicable
Odor Threshold:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	None known
Polymerization:	Will not occur
Conditions To Avoid:	Avoid contact with acids. Do not heat above 176.7 C (350 F).
Materials To Avoid:	Strong oxidizers.
Hazardous Decomposition Products:	Carbon monoxide (CO) Carbon dioxide oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.
Toxicological information on the regulated components of this product is as follows:

Glass oxide is considered a nuisance particulate which will not cause adverse health effects other than respiratory congestion or irritation.

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Diglycidyl resorcinol ether (DGRE) has an oral LD50 (rat) of 400 mg/kg from a repeat dose regimen. Other literature reports an oral LD50 (rat) value of 2,570 mg/kg. The dermal (rabbit) LD50 is >500 mg/kg. A single 8-hour exposure to air saturated with diglycidyl resorcinol ether produced no mortality in rats. DGRE produced severe skin irritation in humans. Allergic skin reactions have also been observed which can be severe in certain individuals. DGRE was found to be mutagenic in the Ames test (*Salmonella typhimurium* (TA100 and TA1535)), with or without metabolic activation. In oral gavage studies conducted by the National Toxicology Program (NTP), DGRE was found to be carcinogenic in male and female rats and mice, causing both benign and malignant neoplasms of the forestomach. However, no skin tumors occurred in 30 female mice that received skin paintings of 1% solution DGRE in benzene three times per week for life. DGRE has shown positive results for mutagenicity in in vitro mammalian cell line tests and chinese hamster ovary cells and mouse lymphoma cells. Diglycidyl resorcinol ether is a chemical known to the State of California to cause cancer.

Silicon Dioxide has acute oral (rat) LD50 values ranging from 3160 mg/kg to >7500 mg/kg. The LC50 (rat) following a 4-hour inhalation study is >0.25 mg/L (maximum attainable concentration). Chronic and sub-chronic inhalation tests with laboratory animals produced lung damage and death after the lung clearance mechanisms were overloaded. Amorphous silica does not cause the lung diseases crystalline silica is known to cause.

Poly (aromatic glycidyl ether) #3 can cause mild eye and moderate skin irritation. Allergic skin reaction may occur in susceptible individuals.

Substituted Bisphenol A has acute oral (rat) and dermal (rabbit) LD50 values of 2000-2200 mg/kg and greater than 2000 mg/kg, respectively. This material caused severe skin irritation (corrosive) and severe eye irritation when tested in rabbits. Overexposure to this material can cause chemical burns. Inhalation of vapor may be irritating to the respiratory tract.

Bismaleimide resin #1 has an acute oral (rat) LD50 of >5000 mg/kg. Literature reports an acute inhalation (rat) LC50 of 0.25 - 0.5 mg/L. This material is a moderate skin sensitizer and may cause mild eye and moderate skin irritation upon direct contact. Irritation of the mucous membranes of the nose and upper respiratory tract may occur following inhalation of mist. This material was negative in the Ames test for mutagenicity and negative in a chromosomal aberration assay. Another study reported positive results in an invitro assay for mutagenicity. Literature reports that dust from this material has caused central nervous system effects in laboratory animals.

Bismaleimide resin #2 has an acute oral (rat) LD50 value of 2400 mg/kg and an acute 4-hour inhalation LC50 (rat) value of 0.09 mg/L. Direct contact with bismaleimide resins can cause moderate eye and skin irritation. Repeated or prolonged contact with bismaleimide resins may cause allergic skin reactions.

Modified phenolic epoxy resin has an acute oral (rat) value of >2000 mg/kg. No eye or skin irritation was produced in tests with rabbits. As with most epoxy resins, prolonged or repeated contact may cause an allergic skin reaction.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause cancer.

12. ECOLOGICAL INFORMATION

Environmental exposure from substances of this preparation are limited due to the physical form of the product. This material is not classified as dangerous for the environment.

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12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA 'listed hazardous waste' or has any of the four RCRA 'hazardous waste characteristics.' Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA 'listed hazardous waste'; information contained in Section 15 of this MSDS is not intended to indicate if the product is a 'listed hazardous waste.' RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-261.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Proper Shipping Name: Not applicable/Not regulated
Hazardous Substances:
Not applicable

TRANSPORT CANADA

Proper Shipping Name: Not applicable/Not regulated

ICAO / IATA

Proper Shipping Name: Not applicable/Not regulated
Packing Instructions/Maximum Net Quantity Per Package:
Passenger Aircraft: -
Cargo Aircraft: -

IMO

Proper Shipping Name: Not applicable/Not regulated

15. REGULATORY INFORMATION

INVENTORY INFORMATION

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

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European Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

China: All components of this product are NOT included on the Chinese inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Diglycidyl resorcinol ether 101-90-6	4 - 5	None	0	Yes	No

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute
- Chronic

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

Fire: 1 - Materials that must be preheated before ignition can occur.

Reactivity: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: New Product

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